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| 10/565,323              | 01/20/2006  | Tsutomu Sawada       | T-1466              | 2209             |
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| AHVAZI, BILAN           |             |                      |                     |                  |
| ART UNIT                |             | PAPER NUMBER         |                     |                  |
| 1796                    |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/565,323

## Applicant(s)

SAWADA ET AL.

## Examiner

Bijan Ahvazi

## Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- \_\_\_\_\_ Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- \_\_\_\_\_ Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This action is responsive to the amendment filed on November 14, 2008.
2. Claims 1-4 are pending.
3. The rejection of claims 1, 3 under 35 U.S.C. 102(b) as being anticipated by Sawada (JP, 2003-212700 A) is withdrawn in view of Applicants' argument of these claims.
4. Claims 1, 3 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada. (JP, 2003-212700 A) in view of Coleman Powermate Pulse II generator (Model # PM0401856).
5. The rejection of claims 1, 3 under 35 U.S.C. 103(a) as being unpatentable over Sawada (JP, 2003-212700 A) in view of Sawada *et al.* (Pub. No. 2006/0144319 A1) and further in view of Coleman Powermate Pulse II generator (Model # PM0401856) is withdrawn in view of Applicants' argument of these claims.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1, 3, and 4, the term "type" is indefinite because the addition of the word "type" to an otherwise definite expression (e.g., Friedel-Crafts catalyst) extends the scope of the expression so as to render it indefinite. *Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955). Claim 2, being dependent on claim 1, is rejected as well.

8. **Note:** The claim limitations of claims 3 and 4 are being construed as invoking 35 USC 112, 6<sup>th</sup> paragraph. In claims 3 and 4, the means plus function language recited in the claim is found in line 2 & line 3 of each claim, i.e. "gas feeder means", "gas plus formation means for...", "acceleration means", and the corresponding structures are limited to those specified in the specification on page 2, ¶0040, line 2, 3, 6 and page 4, ¶0053, line 5.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada. (JP, 2003-212700 A) in view of Coleman Powermate Pulse II generator (Model # PM0401856).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

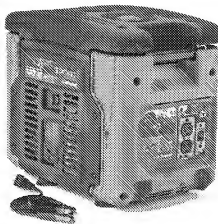
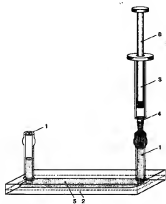
11. Sawada discloses (from machine translation of JP, 2003-212700) the basic constitution of the colloid single crystal production containers which has a plate shaped capillary. The container is made of a hard transparent material (¶ 0038) such as plastics, such as silica glass, various optical glasses, polycarbonate, and an acrylic, are mentioned. The plate-like capillary

tube is formed by having set the inside of a container as the gap of 0.5 mm or less. The pouring-in mouth is protruded and formed in the both ends of a container, and the pouring-in mouth of the one end continues from the internal plate shaped capillary to the further pouring-in mouth of the other end. Additionally, a typical syringe or a pipette can be utilized to perform the pressure operation producing a shearing flow to the colloidal solution resulting in a single crystal (§ 0018). Although the syringe piston movement operation is used (§ 0016) for dispensing fluid, after completing a series of syringe operations result in obtaining a crystal (§ 0006), without involving in air bubbles, since the pressure from syringe piston movement gives a good shearing flow to a colloidal solution, a single crystal can be formed, and the contamination of the air bubbles resulting from the syringe operation with the conventional needle can be prevented and this operation can also be achieved via a tube. This operation does not have any an adverse effect, like the sample dispensing after single crystal formation as well as disturbing a colloid single crystal (§ 0031). It is the examiner's position that the use syringe operations and within the interval of a series of syringe operations is considered to be a driving power in this device; in particular, the use of syringe can subsequently produce air pulses through the operation for colloidal crystal. The schematic diagram of colloidal crystals device as disclosed in JP, 2003-212700, is shown below. However, Sawada fails to disclose a colloidal crystal preparation system comprising compressed gas feeder means, gas pulse formation means for producing a compressed gas as short- time gas pulses.

Since the recited claimed compressed air pulses which are generated by control of a compressed gas are used in the instant applications' limitation claim, it is the examiner's position any compressed generator capable of producing air pluses such as Coleman Powermate Pulse II generator (Model # PM0401856) would possess the claimed limitation. It is the examiner's position that it would have been *prima facie* obvious to use the compressed

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generator as a driving power in Sawada embodiment to give a flow and hard- stopping motion to a colloidal solution in said flat plate type capillary for formation of colloidal crystals of good single crystallinity. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958)



It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the basic constitution of the colloid single crystal production containers which has a plate shaped capillary from the teaching of Sawada with any compressed generator capable of producing air pluses in order to automating a manual activity for the formation of colloidal crystals of good single crystallinity.

12. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada. (JP, 2003-212700 A, machine translation) and Coleman Powermate Pulse II generator (Model # PM0401856) as applied to claim 1, 3 above, and further in view of Sawada *et al.* (JP, 2002-028471, machine translation).

13. Sawada (JP, 2003-212700 A) including Coleman Powermate Pulse II generator discloses the features as discussed above. However, Sawada fails to disclose a process of

preparation of a colloidal crystal gel having good single crystallinity, wherein subsequent to said step of forming colloidal crystals of good single crystallinity, a step of gelating the formed colloidal crystals is applied. Sawada *et al.* ("471") disclose a method for forming colloidal and gelatinized colloidal crystal, method for manufacturing colloidal crystal element, gelatinized colloidal crystal element and colloidal crystalline sheet based thereon (Abstract). Sawada *et al.* disclose a colloidal crystal gelled homogeneously wherein a gelled colloidal crystal, which uses an aqueous liquid as a disperse medium (§10011), at least comprises a polymerizable monomer or macromer, a crosslinking agent and a photo-polymerization initiator, and is gelled by light irradiation (§10024). Sawada *et al.* disclose that a formation method of the colloid crystal is achieved by applying a pressure in form of pulses (Page 12, §10022) in parallel direction which holds a monodisperse particle solution in a colloid crystal state, and makes it flow from the end in a straight flat tube which has a smooth substrates face which appears as two parallel sides in sectional shape (Page 3, Claim3).

Regarding applying a step of gelating before the step of forming colloidal crystals in the instant applications' limitation claim, it is held that it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the basic constitution of the colloid single crystal production containers which has a plate shaped capillary from the teaching of Sawada with applying a step of gelating before the step of forming colloidal crystals as taught by Sawada *et al.* in order to achieve a colloidal crystal on a practical level with a stable reproducibility, i.e., a gelled colloidal crystal

that is homogeneously gelled to within, and provide a process and system for the preparation of that gelled colloidal crystal.

14. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada *et al.* (JP, 2002-028471, machine translation) in view of Coleman Powermate Pulse II generator (Model # PM0401856).

15. Sawada *et al.* (JP, 2002-028471, machine translation) disclose a method for forming colloidal and gelatinized colloidal crystal, method for manufacturing colloidal crystal element, gelatinized colloidal crystal element and colloidal crystalline sheet based thereon (Abstract). Sawada *et al.* disclose a colloidal crystal gelled homogeneously wherein a gelled colloidal crystal, which uses an aqueous liquid as a disperse medium (§10011), at least comprises a polymerizable monomer or macromer, a crosslinking agent and a photo-polymerization initiator, and is gelled by light irradiation (§10024). Sawada *et al.* disclose that a formation method of the colloid crystal is achieved by applying a pressure in form of pulses (Page 12, §10022) in parallel direction which holds a monodisperse particle solution in a colloid crystal state, and makes it flow from the end in a straight flat tube which has a smooth substrates face which appears as two parallel sides in sectional shape (Page 3, Claim3). However, Sawada *et al.* fail to disclose that a colloidal crystal preparation system, comprising compressed gas feeder means, gas pulse formation means for producing a compressed gas as short- time gas pulses.

Since the recited claimed compressed air pulses which are generated by control of a compressed gas are used in the instant applications' limitation claim, it is the examiner's position any compressed generator capable of producing air pluses such as Coleman

Powermate Pulse II generator (Model # PM0401856) would possess the claimed limitation. It is the examiner's position that it would have been *prima facie* obvious to use the compressed generator as a driving power in Sawada embodiment to give a flow and hard- stopping motion to a colloidal solution in said flat plate type capillary for formation of colloidal crystals of good single crystallinity. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the basic constitution of the colloid single crystal production containers which has a plate shaped capillary from the teaching of Sawada *et al.* with any compressed generator capable of producing air pluses in order to automating a manual activity the formation of colloidal crystals of good single crystallinity.

16. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada *et al.* (JP, 2002-028471, machine translation) in view of Mizuno *et al.* (JP, 2002-028471, machine translation).

17. Sawada *et al.* disclose the features as discussed above. However, Sawada *et al.* fail to disclose that a colloidal crystal preparation system, comprising compressed gas feeder means, gas pulse formation means for producing a compressed gas as short- time gas pulses. Mizuno *et al.* disclose thin-film semiconductor processing apparatus which employ a compressed gas to feed a pressure chamber in delaminating an epitaxial film from a single crystal Si substrate over a porous Si layer where the compressed gas is penetrate through the porous Si layer to push up the epitaxial film for the delamination (Claim 1). The apparatus makes possible for delamination of an epitaxial layer without damaging the surface (Abstract).

Regarding applying compressed air pluses which are generated by control of a compressed gas in the instant applications' limitation claim, it is held that it is ***prima facie*** obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the basic constitution of the colloid single crystal production containers which has a plate shaped capillary from the teaching of Sawada *et al.* with any compressed generator capable of producing air pluses as taught by Mizuno *et al.* in order to automating a manual activity the formation of colloidal crystals of good single crystallinity.

### ***Response to Arguments***

18. Applicant's arguments filed 11/14/2008 have been fully considered but they are not persuasive.

The applicants traverse the rejection of claims 1,3 under 35 U.S.C. 103(a) as being unpatentable over Sawada (JP, 2003-212700 A) in view of Coleman Powermate Pulse II generator (Model # PM0401856) due to the fact that Sawada (JP, 2003-212700 A) does not qualify as prior art and accordingly is not available to support the rejection. The examiner respectfully disagrees. Sawada (JP, 2003-212700 A) has a publication date of Jul 30, 2003 which is qualified under 103(a) on the basis of 102(a) with respect to the instant application's national phase filing date of Jul 21, 2004. Therefore, the rejection over Sawada is maintained.

***Examiner Information***

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bijan Ahvazi, Ph.D. whose telephone number is (571)270-3449. The examiner can normally be reached on M-F 8:0-5:0. (Off every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BA/  
Bijan Ahvazi  
Examiner  
Art Unit 1796

/Lorna M Douyon/  
Primary Examiner, Art Unit 1796

1/15/2009